Climate Variability and Change: CalEnergy Project

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Climate Change Research
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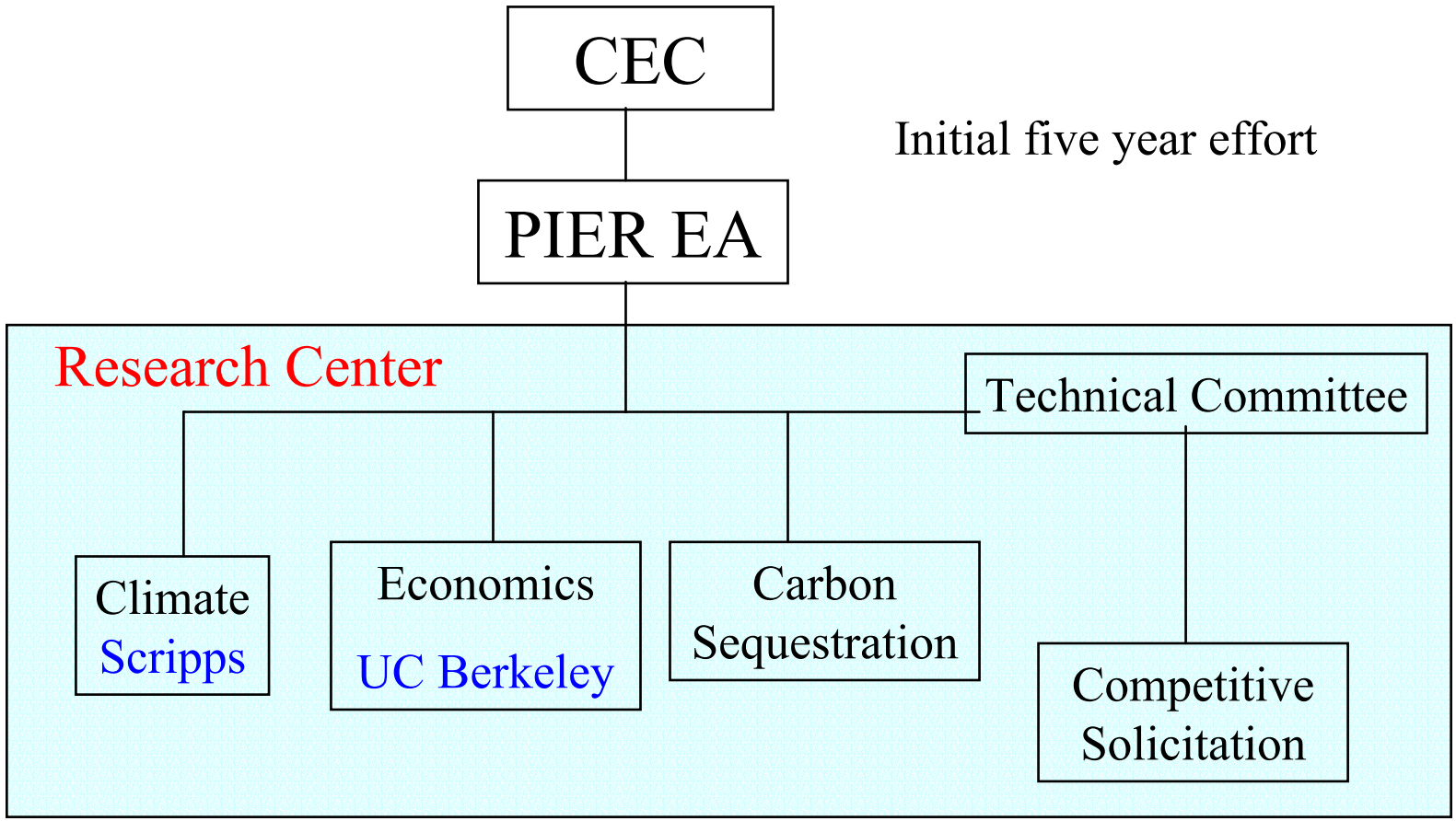
Role of PIER/CEC

- Assisted SIO in the preparation of proposal to NOAA
- Interdivisional team: Glen Sharp, Tom Gorin, Todd Peterson, Ross Miller, Guido Franco
- Part of the SIO activities for the California Climate Change Center

CA Climate Change Center

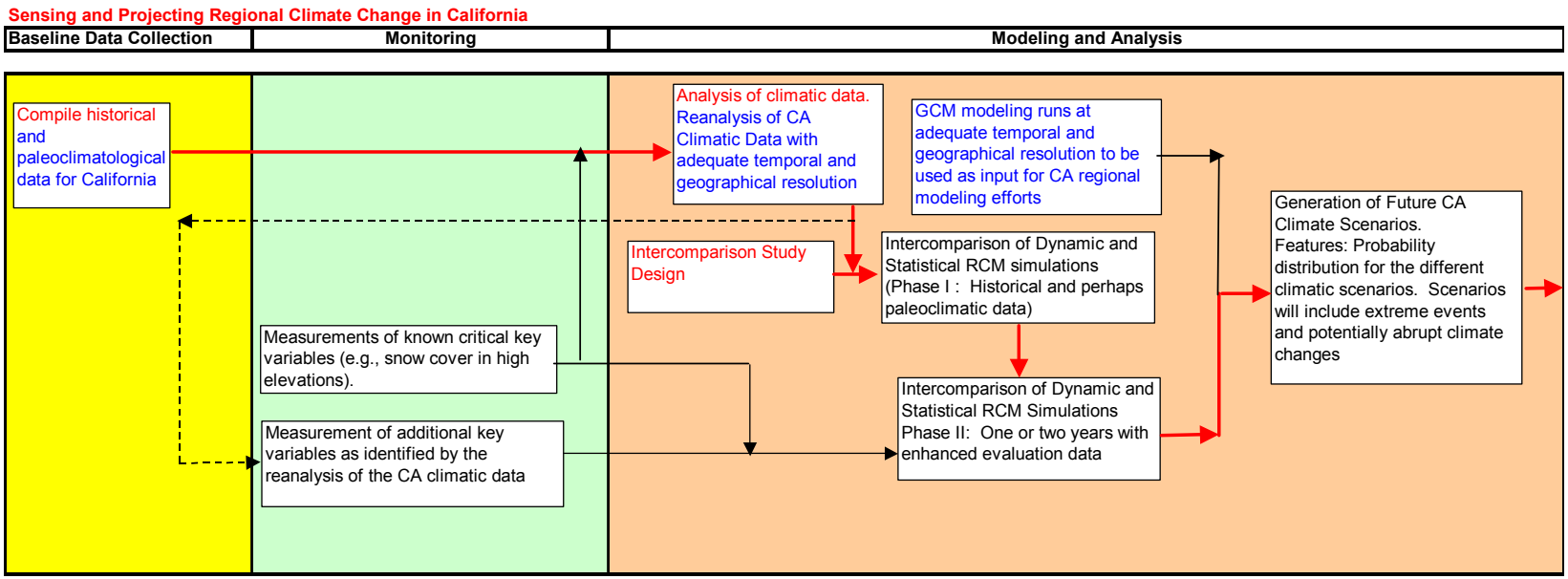


Initial five year effort

Why is this part of our RD&D activities on climate change?

- A seminal paper by Dr. Kosta Georgakakos et al. clearly demonstrated that California could increase its adaptation capacity by adopting modern probabilistic forecasting tools in the management of water resources in the state
- INFORM project
  - Principal Investigator: Dr. Georgakakos (HRC)
  - Joe O'Hagan - PIER research manager

Development of Probabilistic Climate Scenarios for California



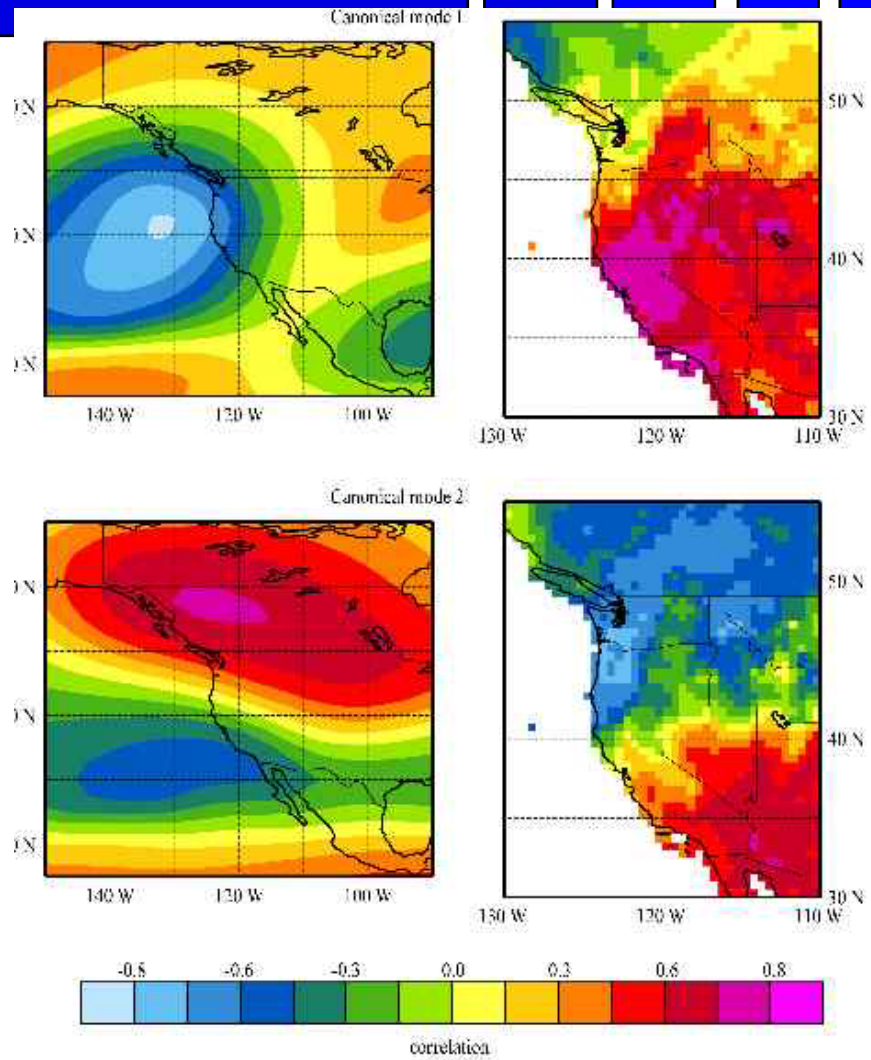
Red = Tier I (project in the critical path and when PIER may provide most of the funding, if needed)
Black = Tier II (PIER and outside funding)
Blue = Tier III (mostly outside funding)

Critical Path

Regional Climate Models

- The same models (numerical and/or statistical) needed for studies on climate variability or seasonal forecast are the models needed to project future climate scenarios for the state
  - Numerical (e.g., Regional Spectral Model)
  - Statistical (e.g., canonical correlation methods)
- They downscale large oceanic or atmospheric features to the regional or local scales (see next slide).

Canonical Correlations



Source: Statistical Downscaling of Large-Scale Atmospheric Circulation To Precipitation over Western North America. S;J. Mason. Scripps 2003

Final Remarks

- The CalEnergy project is ending.
- Joe O'Hagan will manage a related application project if funded by NOAA and/or PIER.
- SIO is developing new and improved downscaling techniques under our climate change research sub-program
- As with the INFORM project, we will use the application tools developed by this new project to test their usefulness as a climate change (increased variability and different overall trend) adaptation strategy with the probabilistic climate scenarios being developed for PIER.